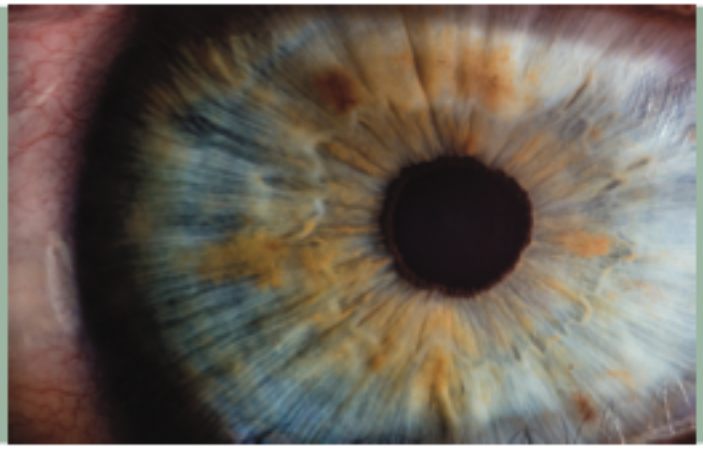
MacularNEWS

Autumn 2020 : Edition 20



Fight Retinal Blindness (FRB)!

The Fight Retinal Blindness (FRB)! Registry collects data on whether vision stabilises or improves in people who are treated for macular diseases, not in clinical trials but in routine clinical practice. This is important because the benefit of new drugs is supposed to be proven by "randomised clinical trials", but these trials often exclude patients who otherwise need treatment and they often use treatments in ways that are not practical in the "real world". Studying these "real world" outcomes is the only way to see whether new drugs actually work when they are released for general use.

The FRB! registry has been systematically collecting standardised outcome data across various centres in Australia, New Zealand and Switzerland since 2007. More recently it has been selected to study real world outcomes in dozens of centres throughout Europe and Asia. The registry aims particularly to identify areas where outcomes are unsatisfactory and to provide advice on how they can be improved. Recent research from the registry has addressed many clinically relevant issues in treating "wet" age-related macular degeneration (AMD) and diabetic macular oedema (DMO) in routine clinical practice. Some of these will be discussed here.

Director's Message

The 2020 Autumn edition covers our recent research from the Fight Retinal Blindness! treatment outcomes registry. In contrast to clinical trials, this registry allows us to study the results of treatment of macular disease in everyday clinical practice and to identify ways to get the best outcomes for our patients. I hope you are as well as you can be at this difficult time and enjoy reading our latest MacularNEWS.

Thank you for your support.

MacularNEWS is now available digitally!
To subscribe, visit http://tinyurl.com/macularnews

LONG-TERM TREATMENT OUTCOMES OF "WET" MACULAR DEGENERATION

Many of our patients have been treated for over 10 years but there are few, if any, data on what happens to eyes treated for such a long time with vascular endothelial growth factor (VEGF) inhibitors for “wet” AMD. We evaluated ten-year outcomes in 712 eyes treated in two regions (Australia and New Zealand [ANZ]; Switzerland) that employed two different treatment approaches. This is the largest sample yet reported in the world that have been treated for at least 10 years. Only 28% of ANZ patients who started treatment 10 years ago were still receiving it at the time of our analysis. This group maintained their starting vision on average throughout the ten-year study (Figure 1A). Nearly half (42%) of these eyes had vision good enough to pass a driving licence test. By contrast, even fewer (12%) Swiss subjects completed 10-years of treatment and they lost, on average, three lines on a vision chart from when they started. Only a third of these eyes would have passed the vison requirements for a driving license test.

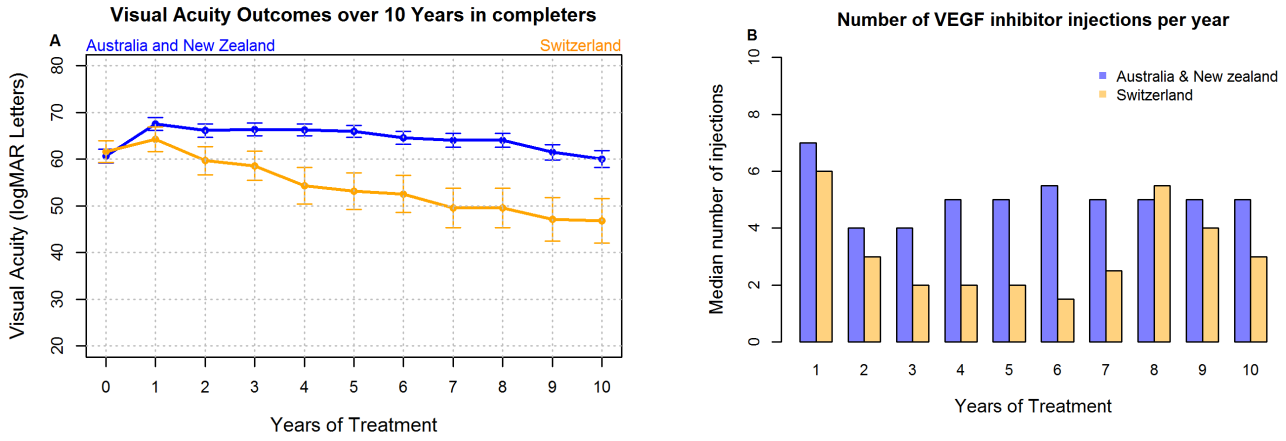


Figure 1. (A) Graph shows yearly average visual acuity in eyes completing 10 years from the start of vascular endothelial growth factor (VEGF) inhibitor treatment for “wet” macular degeneration in Australia and New Zealand (ANZ, blue) and Switzerland (Orange) (B) Bar graph compares the median number of VEGF injections in the ANZ and the Swiss cohorts.

The difference between the two regions appears to have been the different treatment regimens they used. ANZ patients were treated with the “treat and extend” (T&E) regimen. This regimen is said to be “proactive”; it aims to keep the swelling and bleeding inactive by extending the interval between treatments after the underlying lesion becomes inactive until it reactivates then the interval is reduced a little and the treatment is continued indefinitely. Swiss eyes followed the “pro re nata(PRN) approach which is said to be reactive since the lesion is only treated when it reactivates. This PRN regimen was the initial approach in most of Europe and North America to begin with, that generally delivers fewer injections, but it requires more visits. Consistent with this, eyes of ANZ patients received more injections than those from Switzerland over the ten years (Figure 1B) from fewer visits with better disease control. These findings are amongst the most compelling data that adds to the benefits of the T&E regimen for wet AMD.

TREATMENT OUTCOMES OF RANIBIZUMAB VERSUS AFLIBERCEPT FOR “WET” MACULAR DEGENERATION

Another study from the FRB! Registry compared three-year treatment outcomes of the 2 main VEGF inhibitors we use to treat wet AMD in Australia: ranibizumab (Lucentis) and aflibercept (Eylea) in routine clinical practice. The mean improvement in vision in both the ranibizumab (purple line, Figure 2) and aflibercept (blue line, Figure 2) groups at 3 years was similar, as were the median numbers of injections and clinical visits. Not many eyes switched treatment, but more switched from ranibizumab to aflibercept than vice versa. This study found that neither ranibizumab nor aflibercept was superior to the other in terms of vision outcomes and treatment frequency at three years for “wet” AMD in routine clinical practice. These findings are helpful so that doctors have the best understanding of the relative efficacy of the drugs and that switching between one or the other is unlikely to achieve much, other treatment approaches should be considered in eyes that are not responding optimally.

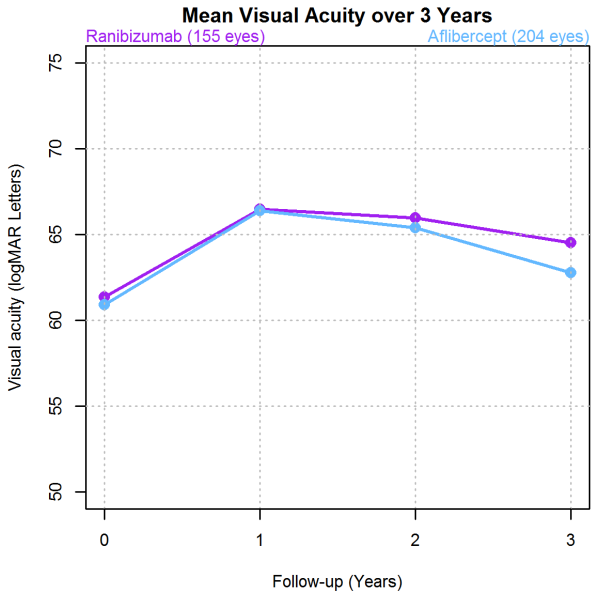


Figure 2. Graph showing mean visual acuity for eyes on ranibizumab (purple) and aflibercept (light blue) completing three years from the start of treatment. There is an initial strong improvement by one year which tends to slowly subside with time.

Dr Sanjeeb Bhandari presenting research from the Fight Retinal Blindness! Project at the Royal Australian and New Zealand College of Ophthalmologists 51st Annual Congress in Sydney.

The FRB! Registry also collects data on treatment outcomes of diabetic macular oedema (DMO), swelling of the central retina which is the commonest cause of vision loss in people with diabetes. The DMO module was first implemented in Australia, New Zealand and Switzerland in April 2015 and has now expanded to Asia and Europe.

CHANGING TREATMENT PATTERNS OF DIABETIC MACULAR OEDEMA FROM 2009 – 2019

A study of data from the DMO module evaluated the treatment patterns for DMO in routine clinical practice from 2009 – 2019 and their five-year outcomes. It was found that injections of VEGF inhibitors became more popular than macular laser or steroid injections for treatment of DMO from 2011 onwards (Figure 3). The choice of VEGF inhibitor also shifted from bevacizumab, the "off label' alternative, to ranibizumab, then to aflibercept as new drugs became available. Visual outcomes at 5 years improved from 2011 to 2014, mostly because treatment started with better vision. Gain in visual acuity, however, was significantly worse than reported in clinical trials, with eyes in routine clinical practice receiving fewer VEGF inhibitor treatments than those in clinical trials. This study suggests that under-treatment in routine clinical practice at the time of this analysis resulted in inferior outcomes. There has been much new information on treating DMO since this analysis which has emphasised that DMO should be treated more aggressively. We will now study whether the outcomes of eyes treated more recently are better than those of eyes treated a decade ago.

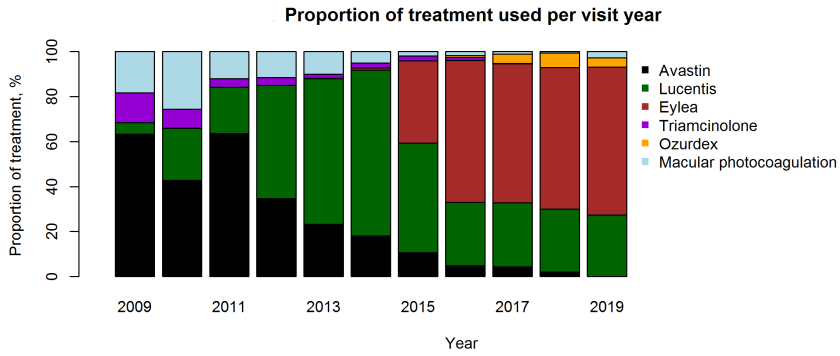


Figure 3. Stacked bar plot showing the proportions of treatments used for diabetic macular oedema for initial therapy and at follow up visits.

We also compared 12 months treatment outcomes of the two main VEGF inhibitors for DMO in routine clinical practice and found thatboth improved vision and reduced macular thickness in eyes with DMO(Figure 4). Aflibercept was more effective in reducing swelling of the macula and resulted in greater visual gains when the starting visual acuity was less than driving vision,but there was no difference when starting vision was was better than this. This study showed that whilst both treatments were effective for DMO at 12 months,aflibercept may have the edge when vision is already impaired. These findings have practical implications for doctors when they choose which drug they will use for DMO.

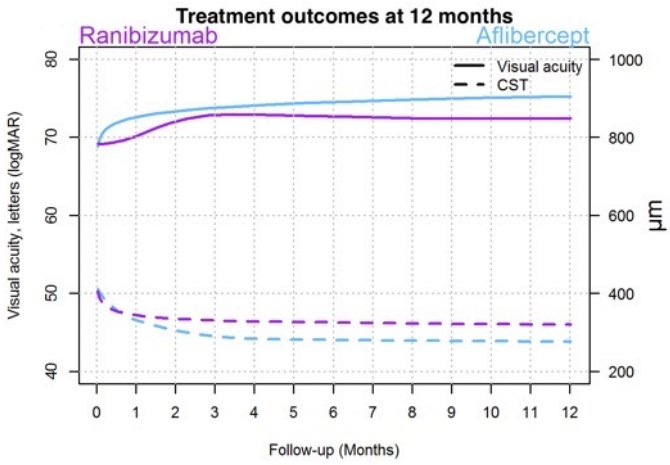


Figure 4. Line graphs showing mean visual acuity (solid lines) in logMAR letters (y-axis) and central subfield thickness (dashed lines) in microns (z-axis).

Save Sight Institute is a centre of
The University of Sydney.

SAVE SIGHT INSTITUTE

THE UNIVERSITY OF SYDNEY